BINUS University

Academic Career: ***Undergraduate / ~~Master~~ / ~~Doctoral~~ *)***			**Class Program:** ***~~International~~/Regular/~~Smart Program~~/Global Class*)***		
☐ **Mid Exam** ☑ **Final Exam** ☐ **Short Term Exam** ☐ **Others Exam : _____**			**Term : ~~Odd~~/Even/~~Short~~ *)**		
☑ **Kemanggisan** ☑ **Alam Sutera** ☐ **Bekasi** ☐ **Senayan** ☐ **Bandung** ☐ **Malang**			**Academic Year :** **2019 / 2020**		
Faculty / Dept.	:	School of Computer Science	Deadline	Day / Date :	Monday / Jun 29th, 2020
				Time :	13:00
Code - Course	:	COMP6115 – Object Oriented Analysis & Design	Class	:	All Classes
Lecturer	:	Team	Exam Type	:	Online
*) *Strikethrough the unnecessary items*					
The penalty for CHEATING is DROP OUT!!!					

I. Essay (50%)

Note: all essay questions should be answered within 300 until 500 words.

1. (Weight 10%) When considering the design of an object-oriented system, a set of criteria exists, that can be used to determine whether the design is a good one or a bad one. A good design is one that balances trade-offs to minimize the total cost of the system over its entire lifetime. Describe the following design criteria including **coupling**, **cohesion**, and **connascence**!

2. (Weight 10%) Applications are of little use without the data that they support. One of the leading complaints by end users is that the final system is too slow, so to avoid such complaints project team members must allow time during design to carefully make sure that the file or database performs as fast as possible. The design of the data management layer addresses these concerns. It includes both the design of data access and manipulation classes and the actual data storage. The design of the data access and manipulation classes should ensure the independence of the problem domain classes from the data storage format. Name and describe, at least 3 out of 5 choices about the **different types of object persistence formats**!

3. (Weight 10%) From a user interface design perspective, mobile application is both exciting and challenging. However, just because these mobile devices have the ability to surf the web, does not mean that a simple web interface is the answer. These devices have limited screen space and have capabilities, such as touch screens and haptic feedback (such as vibration or pulses), which regular computers do not. Describe the unique issues related to **designing user interfaces for mobile computing** platforms!

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4. (Weight 10%) Testing is more critical to object-oriented systems than to systems developed in the past. Based on encapsulation (and information hiding), polymorphism (and dynamic binding), inheritance, reuse, and the actual object-oriented products, thorough testing is much more difficult and critical. Mention the 4 steps of software testing, including: **Unit Testing**, **Integration Testing**, **System Testing**, and **Acceptance Test**.

5. (Weight 10%) What are the obstacles for provisioning the physical architecture layer with cloud technologies? What, if any, are the issues related to **security in the cloud computing** environment?

II. Cases (50%)

From the following use case description:

Use Case Id: UC01
Use Case Name: Issues Car Rent
Actors: Car Rent Receptcionist
Goal: To hire a car

Overview: When a customer comes into the car rental shop, they choose a car to rent. The Recepcionist look up the car detail on the system and tells the customer how much it will cost to rent the car for aspecified period. The customer pays, is issued with a receipt, then leaves with the car.

Typical course events:

Actor action	System response
1. The customer chooses a car	
2. The Receptionist enter the car police number	3. Display the car details including daily rental rate and deposit
4. Customer specifies length of rent	
5. Receptionist keys this in	6. Display total rental cost
7. Customer agrees the price	
8. Receptionist keys in the customer detail	9. Display customer detail
10. Customer pays the total cost	
11. Receptionist records amount paid	12. Print a receipt
13. Customer leaves with the car	

Alternative courses:

Steps 8 and 9	The customer details are already in the system so the Receptionist need only to enter an identifier and the system will display the customer details
Steps 7-12	The customer may not be happy with the price and may terminate the transactions

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From the use case description above (simple two columns format, with alternative courses), you are asked to draw the static aspect of modeling:

a. (Weight 20%) The class diagram for this scope of this module, draw the **object classes**, **do not use "system" as class**!!!

b. (Weight 15%) Map your class diagram into **relation model diagram**

c. (Weight 15%) Assume that the car rental is the integrated system and has some branch offices in the country, draw the **deployment diagram** to show the need for infrastructure of the system.

-- Good Luck –

Note:
Please submit your work in ".docx" format, with file name format:
UAS_Comp6115_OOAnalysis&Design_nim_namaMhs.docx

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